

REMARKS/ARGUMENTS

Reconsideration of this patent application is respectfully requested in view of the foregoing amendments, and the following remarks. Claim 5 is in the application and has been amended. No new matter has been added.

The Examiner has rejected claim 5 under 35 U.S.C. 103(a) as being unpatentable over *Avezou U.S. Patent No. 4,651,631* in view of *Ruhle U.S. Patent No. 6,837,298* and *Dunn GB Patent No. 2 035 448*. Applicant respectfully traverses.

Claim 5 has been amended to clarify that the ring element with the ring carrier is fit into the recess, to clarify that ring carrier is welded to the cooling channel and cast into the ring element prior to the ring element being welded to the main body. Support for this amendment can be found in the specification on page 4, first paragraph.

The present invention relates to a method for forming a piston in which a base body is produced via forging, so that a recess having a rectangular cross section is formed into a radially outer region of the piston crown. Free shanks of an

essentially toroid-shaped cooling channel, which is C-shaped in cross-section and radially open to the outside, and produced from sheet steel, are welded onto a cylindrical surface of a ring insert made of NiResist, which surface lies radially on an inside. The ring insert provided with the cooling channel is then cast into a ring element made of aluminum, using a composite casting method, said ring element having a rectangular cross section such that the ring element fits into the recess. The ring element containing the ring insert with the cooling channel is then fit into the recess and welded to the base body, and the piston is formed into a final shape by means of a cutting production method.

Avezou teaches only that a piston can have a ring element that is made from a different material than the main body, with the two parts being welded together. Ruhle teaches only that an aluminum ring carrier can be welded to a ring carrier. Dunn teaches only that a ring carrier made of NiResist can be poured into a complete piston. There is no teaching in any of the references that a ring carrier made of NiResist can be cast into a separate ring element, with that separate ring element being subsequently welded to the main body. The missing step in all of these references is the casting of the ring carrier into the ring

element. This is not taught or suggested by any of the cited references, so a combination of all three would not lead to the present invention as claimed in claim 5.

It is a goal of the automotive industry to provide resistance-capable pistons, in order to extend the life of high efficiency motors. The present invention achieves this goal with a piston which combines the advantages of ring carriers made of NiResist, to prevent a deflection of the ring groove of the ring carrier as well as material transfer to the piston ring by micro welding of the piston ring with the ring groove, with the advantage of a forged piston, which exhibits a much greater strength than cast aluminum pistons.

Accordingly, Applicant submits that claim 5 is patentable over the cited references, taken either singly or in combination. Early allowance of the amended claims is respectfully requested.

Respectfully submitted,
Rainer SCHARP

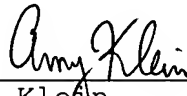


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